

USB ISO ADAPTER Our Products: USB High Speed - High Isolated - Industry Converter Interfaces
 Highest quality - on the basis of our experience - we not accept compromise!

USB 2.0 - RS485 Converter Cable - product #240

USB 2.0 <=> RS485 Converter Cable (product no. #240)

Notes:

Extreme tough ! Designed for industry !
 Dimension outside boiler (mm) L 55 W 20 H 16 !
 Industrial Sub-D housing - reinforced strain relief !
 Cable length from 0,15 up to 5,0 m !

USB Modul:

USB Specification 2.0 & 1.1
 Automatic switching Ready-Transmit
 Max. 3 Mbps "data transfer rate"
 Aided "Remote wake-up" and power management
 Plug & Play installing
 Royal driver - FTDI Chipset

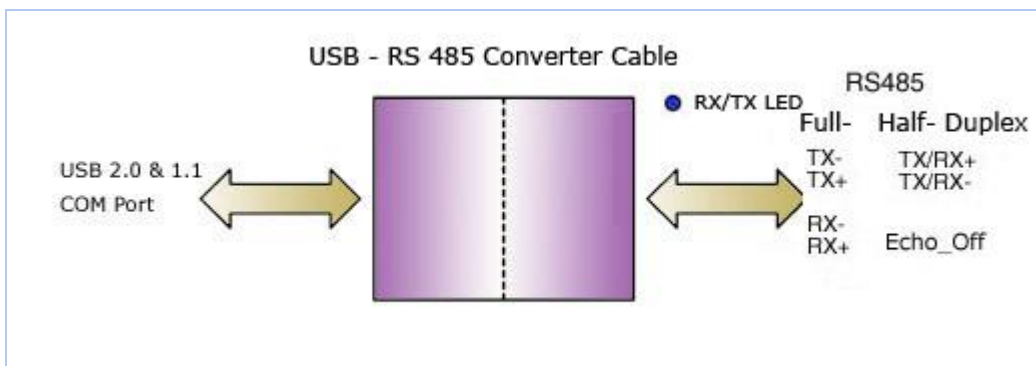
RS485 Receiver:

+/- 15 kV Human Body Model
 +/- 6 kV IEC 1000-4-2, Contact Discharge
 +/- 12 kV IEC 1000-4-2, Air-Gap Discharge
 Allow Up to 128 Receivers on the Bus
 True-Fail-Safe Receiver
 -7V .. +12V Common-Mode Range
 Thermal Protection Against Output Short Circuit

RS485 Driver:

+/- 9 kV Human Body Model
 Slew-Rate Limited for Errorless Data Transmission
 -7V .. +12V Common-Mode Range
 Current Limiting
 Thermal Shutdown for Driver-Overload Protection

Block diagram



Converter images



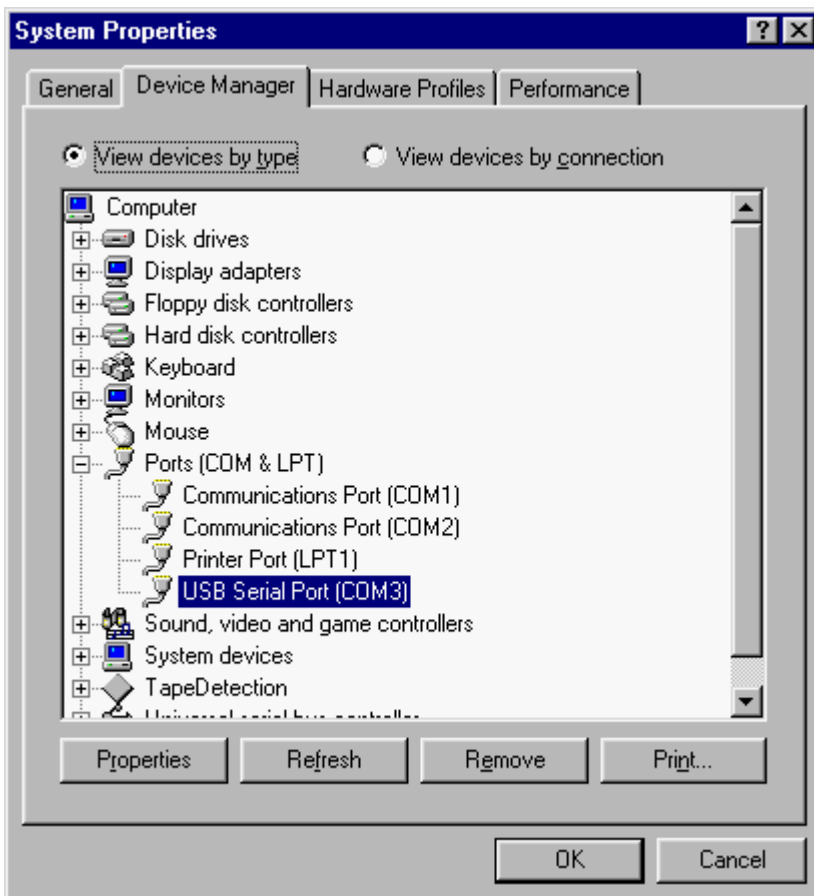
Technical characteristics

Product:	USB2.0 <=> RS485 Converter Cable	#240
Driver:	please see Drivers	
Installing:	Plug & Play please see FAQs & Doks	
Chipset:	FTDI	
Cable length:	0,15 up to 5,0 m	
USB-Interface:	Virtual COM port (VCP) VCP drivers cause the USB device to appear as an additional COM port available to the PC. Application software can access the USB device in the same way as it would access a standard COM port.	
Connection 1:	USB2.0 (1.1)	
Pin assignment 1:	Pin 1 - USB Vcc Pin 2 - USB Data- Pin 3 - USB Data+ Pin 4 - USB GND	
Connection 2:	RS485 Sub-D 9 pol. Male	
Pin assignment 2:	Pin 1 - TX- (Z) - Converter Output Pin 2 - TX+ (Y) - Converter Output Pin 3 - RX+ (A) - Converter Input Pin 4 - RX- (B) - Converter Input Pin 5 - GND - Signal Ground Pin 6 - 120R - Terminating resistor Pin 7 - 120R - Terminating resistor - Wiring Pin 8 - Echo Off - by Halfduplex Pin 9 - Echo Off - by Halfduplex - Wiring	
Terminating resistors:	2 x 120 Ohm (1 x integral, 1 x to bridge Pin 6 - 7 - Wiring)	
Connection 2 guard:	RS485 Receiver: +/- 15 kV Human Body Model +/- 6 kV IEC 1000-4-2, Contact Discharge +/- 12 kV IEC 1000-4-2, Air-Gap Discharge Allow Up to 128 Receivers on the Bus True-Fail-Safe Receiver -7V .. +12V Common-Mode Range Thermal Protection Against Output Short Circuit RS485 Driver: +/- 9 kV Human Body Model Slew-Rate Limited for Errorless Data Transmission -7V .. +12V Common-Mode Range Current Limiting Thermal Shutdown for Driver-Overload Protection	
Handshake:	no X-On / X-Off	
TX/RX switching:	automatic	
Transmission lines:	2-Wires Halfduplex or 4-Wires Fullduplex	
Data transfer rates:	183, 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 11520, 230400, 460800, 921600 bps. TTL 3,3V and 5V up to 3000000 bps.	

	Supported transfer rates PDF file	
Status indication:	Red LED - TXD & RXD activity	
Operating temperature:	-10..+70°C	
Available Drivers:	<p>Windows Vista, Windows Vista x64 Windows XP, Windows XP x64 Windows 2000</p> <p>Windows Server 2008, Windows Server 2008 x64</p> <p>Windows Server 2003, Windows Server 2003 x64</p> <p>Windows 98, Windows ME</p> <p>Mac OS X (Intel), Mac OS X, Mac OS 9, Mac OS 8</p> <p>Linux, Linux x86_64</p> <p>Windows CE 6.0, CE 4.2 - 5.2, Windows Mobile 6 Windows Mobile 5, PocketPC 2003 ARM/XScale Processor & x86 Processor</p> <p>Windows CE 6.0 and CE 4.2 - 5.2 (Other Processors) - email support</p>	

Installing the USB-RS485 converter

The USB to RS485 converter is shipped with a Windows driver disk. When the converter is connected to the Windows based host computer, Windows will display the "Found New Hardware" screen and will prompt the user for a driver for the device. With the driver disk installed in drive "A", select the "Have Disk" option and browse the driver disk to the appropriate driver. Once installed, the USB converter will be assigned the next available COM port on the host computer. To verify the proper set-up, open the "System" icon in the "Control Panel" and click on the "Device Manager" tab. Under "Ports", there should now be a new COM port labeled "USB Serial Port".

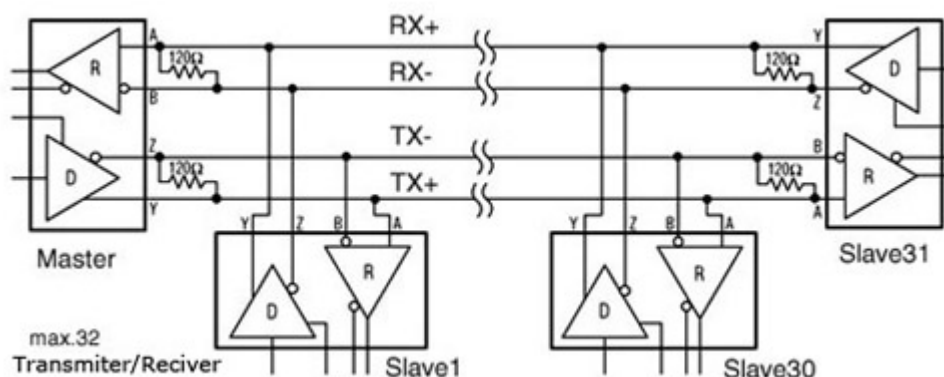


RS485 Info

EIA-485 only specifies electrical characteristics of the driver and the receiver. It does not specify or recommend any data protocol. EIA-485 enables the configuration of inexpensive local networks and multidrop communications links. It offers high data transmission speeds (35 Mbit/s up to 10 m and 100 kbit/s at 1200 m). Since it uses a differential balanced line over twisted pair (like EIA-422), it can span relatively large distances (up to 4000 feet or just over 1200 metres).

In contrast to EIA-422, which has a single driver circuit which cannot be switched off, EIA-485 drivers need to be put in transmit mode explicitly by asserting a signal to the driver. This allows EIA-485 to implement linear topologies using only two wires. The equipment located along a set of EIA-485 wires are interchangeably called nodes, stations and devices.

The recommended arrangement of the wires is as a connected series of point-to-point (multidropped) nodes, a line or bus, not a star, ring, or multiply-connected network. Ideally, the two ends of the cable will have a termination resistor connected across the two wires. Without termination resistors, reflections of fast driver edges can cause multiple data edges that can cause data corruption. Termination resistors also reduce electrical noise sensitivity due to the lower impedance, and bias resistors are required. The value of each termination resistor should be equal to the cable impedance (typically, 120 ohms for twisted pairs).



RS422 and RS485 Standards	RS422	RS485
Mode of operation	Differential	Differential
Allowed no. of Tx and Rx	1 Tx, 10 Rx	32 Tx 32 Rx
Maximum cable length	4000ft length	4000ft length
Maximum data rate	10 Mbps	10 Mbps
Minimum driver output range	±2V	±1,5V
Maximum driver output range	±5V	±5V
Maximum driver short-circuit current	150 mA	250 mA
Tx load impedance	100 Ohm	54 Ohm
Rx input sensitivity	±200 mV	±200 mV
Maximum Rx input resistance	4 kOhm	12 kOhm
Rx input voltage range	±7V	-7V to +12V
Rx logic high	>200 mV	>200mV
Rx logic low	<200mV	<200mV

Cable length (m) = 100.000.000 / Baud (bps)

Baud (kbps)	9600	19,2	38,4	115,2	250	500	750
Lenght (m)	10417	5208	2602	868	400	200	133
Baud (Mbps)	1	2	3	10			
Lenght (m)	100	50	33	10			

[More Infos - Wiki - RS485](#)